

AMENDMENTS TO CLAIMS:

Claims 1 through 52 (cancelled).

53. (withdrawn) A reaction vessel carrying insert adapted for use in apparatus for performing parallel chemistry reactions, the apparatus having a base comprising a frame with a wall defining an insert receiving opening, said insert being adapted to be removably received within said insert receiving opening in only a single orientation and comprising an array of reaction vessel receiving recesses.

54. (withdrawn) The insert of Claim 53 adapted for use in combination with a standard automatic liquid handler capable of dispensing liquid to a plurality of preset locations, wherein said recesses are located so as to align with the preset liquid dispenser locations when said insert is received in said frame.

55. (withdrawn) The insert of Claim 53 wherein said insert has at least 48 recesses.

56. (withdrawn) The insert of Claim 55 wherein each of said recesses is adapted to receive an 11.6 mm reaction vessel.

57. (withdrawn) The insert of Claim 53 wherein said insert has 24 recesses.

58. (withdrawn) The insert of Claim 57 wherein each of said recesses is adapted to receive a 17 mm reaction vessel.

59. (withdrawn) The insert of Claim 53 wherein said insert has 9 recesses.

60. (withdrawn) The insert of Claim 59 wherein each of said recesses is adapted to receive a 24 mm reaction vessel.

61. (withdrawn) The insert of Claim 53 wherein said insert has 6 recesses.

62. (withdrawn) The insert of Claim 61 wherein each of said recesses is adapted to receive a 34 mm reaction vessel.
63. (withdrawn) The insert of Claim 53 for use with a second insert, said insert and said second insert being adapted to be interchangeably received within said frame opening.
64. (withdrawn) The insert of Claim 53 wherein each of said recesses comprises a substantially conical portion.
65. (withdrawn) The apparatus of Claim 53 wherein each of said recesses comprises a substantially semi-circular portion
66. (withdrawn) The insert of Claim 53 wherein each of said recesses comprises an opening.
67. (withdrawn) The insert of Claim 66 wherein said opening is situated at the bottom of said recess.
68. (withdrawn) The insert of Claim 53 wherein said insert comprises a thermocouple receiving opening.
69. (withdrawn) The insert of Claim 53 for use in combination with an extraction tool having a protrusion and wherein said insert comprises a protrusion receiving opening.
70. (withdrawn) The combination of Claim 69 wherein said tool comprises means for expanding said protrusion to frictionally engage said protrusion receiving opening.
71. (withdrawn) The combination of Claim 70 wherein said tool further comprises means for maintaining said protrusion in said expanded state.
72. (withdrawn) The insert of Claim 53 wherein said insert comprises first and second rounded corners.

73. (withdrawn) The insert of Claim 72 wherein each of said rounded corners of said insert has radius and wherein the radius of said first insert corner is different than said radius of said second insert corner.

74. (withdrawn) The insert of Claim 53 wherein said insert comprises an outer wall and a bottom and wherein said outer wall is inclined relative to a line perpendicular to said bottom.

75. (withdrawn) The insert of Claim 74 wherein the inclination of said insert wall is approximately one degree.

76. (withdrawn) Magnetic stirrer means for use in combination with a parallel chemistry reactor, said stirrer means comprising a body with an opening, an impeller freely rotatably received within said opening, magnetic means associated with said impeller and means for rotating said impeller.

77. (withdrawn) The stirrer means of Claim 76 wherein said means for rotating comprises flow means through said stirrer means body, said flow means comprising an input port in said stirrer body, a first channel within said stirrer body extending between said input port and said impeller receiving opening, a output port in said stirrer body and a second channel within said stirrer base extending between said impeller receiving opening and said output port.

78. (withdrawn) The stirrer means of Claim 77 wherein said rotating means further comprises a second opening in said stirrer body, a second impeller freely rotatably received within said second opening in said stirrer body, second magnetic means associated with second impeller and means for operably connecting said second opening between said first and said second channels.

79. (withdrawn) The stirrer means of claim 77 comprising means for regulating the flow to said impeller receiving openings such that the flow to said openings is approximately equal.

80. (withdrawn) The stirrer means of Claim 76 for use in combination with a shaker platform with upstanding pins, wherein said stirrer body comprises means for engaging said shaker platform pins.

81. (withdrawn) An extraction tool for use with a vessel receiving insert adapted to be removably received within an opening in the frame of modular apparatus for performing parallel chemistry reactions, said insert comprising a recess, said tool comprising an expandable protrusion and means for causing said protrusion to change between an expanded state, wherein said protrusion engage said recess, and a non-expanded state, wherein said recess is released.

82. (withdrawn) The tool of Claim 81 further comprising means for maintaining said protrusion in said expanded state.

83. (withdrawn) The tool of Claim 82 wherein said protrusion comprises first and second sections each having a surface and said maintaining means comprises a ball and spring means urging said ball to cooperate with said surfaces to move said sections of said protrusion apart.

84. (withdrawn) The tool of Claim 81 further comprising means for maintaining said protrusion in said non-expanded state.

85. (withdrawn) The tool of Claim 84 wherein said protrusion comprises first and second sections and said maintaining means comprises a pin and spring means urging said pin to move from a position between said sections.

86. (currently amended) Apparatus for performing chemistry reactions in a plurality of open-mouthed, closed-bottomed, reaction vessels in conjunction with a liquid handler of the type having a plurality of individual liquid dispensing means arranged in a pattern, said apparatus comprising a base defining an insert-receiving space, means for sealing the mouths of the reaction vessels, said sealing means being mounted above said base, between the reaction vessels and the liquid dispensing means of the liquid handler, and comprising a sealing plate having a plurality of sealable openings, each of said sealable openings being aligned with a different one of the reaction vessels, such that liquid can be dispensed through said sealing plate into the reaction vessels from the liquid dispensing means of the liquid handler, said insert-receiving space being situated in operative registration with the liquid dispensing means of the liquid handler, and in combination therewith, first and second inserts alternatively insertable into said insert-receiving space in said base, means for causing said first and second inserts to be received into said insert-receiving space only in a single orientation, each of said inserts comprising a plurality of individual reaction vessel-receiving recesses arranged in a different array, each of said reaction vessel-receiving recesses in each of said insert recess arrays being aligned with a different one of the liquid dispensing means of the liquid handler when the insert is received in said insert-receiving space in said base.

87. (currently amended) The apparatus of any of claims 86, 121 or 123 wherein each of said first and second inserts comprises a reaction vessel-receiving recess array with a different number of vessel-receiving recesses.

88. (currently amended) The apparatus of any of claims 86, 121 or 123 wherein the vessel-receiving recess array in said first insert comprises recesses of a different size than said recesses in the reaction vessel-receiving recesses in said second insert.

89. (cancelled) The apparatus of claim 86 further comprising a plate mounted above said base, said plate comprising a plurality of openings, each of said openings being aligned with a different one of said reaction vessel-receiving recesses in the insert received in said insert-receiving space in said base.

90. (currently amended) The apparatus of any of claims 86, 121 or 123 wherein at least one of said inserts comprises 48 vessel-receiving recesses.

91. (previously presented) The apparatus of claim 90 wherein each of said recesses is adapted to receive a reaction vessel with a 11.6 mm diameter.

92. (currently amended) The apparatus of any of claims 86, 121 or 123 wherein at least one of said inserts comprises 24 vessel-receiving recesses.

93. (previously presented) The apparatus of claim 92 wherein each of said recesses is adapted to receive a reaction vessel with a 17 mm diameter.

94. (currently amended) The apparatus of any of claims 86, 121 or 123 wherein at least one of said inserts comprises 9 vessel-receiving recesses.

95. (previously presented) The apparatus of claim 94 wherein each of said recesses is adapted to receive a reaction vessel with a 24 mm diameter.

96. (new) The apparatus of claim 86 wherein at least one of said inserts comprises 6 vessel-receiving recesses.

97. (currently amended) The apparatus of any of claims 86, 121 or 123 wherein at least one of said inserts comprises 6 vessel-receiving recesses.

98. (previously presented) The apparatus of claim 97 wherein each of said recesses is adapted to receive a reaction vessel with a 34 mm diameter.

99. (currently amended) The apparatus of any of claims 86, 121 or 123 wherein each of said vessel-receiving recesses in each of said inserts comprises a substantially conical portion.

100. (currently amended) The apparatus of any of claims 86, 121 or 123 wherein each of said vessel-receiving recesses in each of said inserts comprises a substantially semi-circular portion.

101. (currently amended) The apparatus of any of claims 86, 121 or 123 wherein each of said vessel-receiving recesses in each of said inserts comprises an opening proximate the bottom of said recess.

102. (currently amended) The apparatus of any of claims 86, 121 or 123 wherein said base comprises a temperature control fluid channel.

103. (previously presented) The apparatus of claim 102 further comprising a temperature control fluid source and means for connecting said source and said channel.

104. (previously presented) The apparatus of claim 103 further comprising a temperature control module adapted to be interposed between said plate and said base.

105. (currently amended) The apparatus of any of claims 86, 121 or 123 wherein said first insert comprises a thermo-couple receiving opening.

106. (currently amended) The apparatus of any of claims 86, 121 or 123 further comprising an insert extraction tool having a protrusion, wherein said first insert comprises a protrusion receiving opening.

107. (previously presented) The apparatus of claim 106 wherein said tool comprises means for changing said protrusion between an expanded state, to frictionally engage said protrusion receiving opening, and a non-expanded state, to disengage said opening.

108. (previously presented) The apparatus of claim 107 wherein said protrusion is normally in the expanded state.

109. (previously presented) The apparatus of claim 107 wherein said protrusion is normally in the non-expanded state.

110. (previously presented) The apparatus of claim 109 further comprises means for maintaining said protrusion in the non-expanded state.

111. (currently amended) The apparatus of claim 86 123 wherein said inserts can be inserted into said insert-receiving space in said base in only a single orientation.

112. (currently amended) The apparatus of claim 86 123 wherein each of said inserts comprises first and second rounded corners, each of said corners having a different radius.

113. (previously presented) The apparatus of claim 112 wherein said insert-receiving space comprises first and second rounded corners, each of said corners of said space having a radius that corresponds to the radius of a different one of said corners of each of said inserts.

114. (currently amended) The apparatus of any of claims 86 or 121 wherein said base comprises a wall defining said insert-receiving space and a bottom surface, said wall being inclined relative to a line perpendicular to said bottom surface of said base by a given amount.

115. (currently amended) The apparatus of any of claims 86 or 121 wherein each of said inserts comprises a side wall and a bottom surface, said side wall being inclined relative to a line perpendicular to said bottom surface of said insert by a given amount.

116. (cancelled) The apparatus of claim 115 wherein each of said inserts comprises a side wall and a bottom surface, said side wall being inclined relative to a line perpendicular to said bottom surface of said insert by a given amount.

117. (previously presented) The apparatus of claim 115 wherein the amount of inclination of said wall of said base and the amount of inclination of said side wall of said insert are substantially equal.

118. (previously presented) The apparatus of claim 117 wherein the amount of inclination of said wall of said base and the amount of inclination of said side wall of said insert are each approximately one degree.

119. (currently amended) The apparatus of any of claims 86, 121 or 123 wherein each of said inserts has a side wall with an outwardly extending lip adapted to rest on said base when said insert is received in said space.

120. (currently amended) The apparatus of any of claims 86, 121 or 123 further comprising magnetic stirrer means and a magnetic stirrer bar situated within one of the reaction vessels received in one of the recesses in one of said inserts, said bar being longer than the diameter of the vessel in which said bar is received.

121. (newly presented) Apparatus for performing chemistry reactions in a plurality of open-mouthed, closed-bottomed, reaction vessels in conjunction with a liquid handler of the type having a plurality of individual liquid dispensing means arranged in a pattern, said apparatus comprising a base defining a generally rectangular insert-receiving space

having four rounded corners, each of said insert-receiving space corners having a radius, means for sealing the mouths of the reaction vessels, said sealing means being mounted above said base, between the reaction vessels and the liquid dispensing means of the liquid handler, and comprising a sealing plate having a plurality of sealable openings, each of said sealable openings being aligned with a different one of the reaction vessels, such that liquid can be dispensed through said sealing plate into the reaction vessels from the liquid dispensing means of the liquid handler, said insert-receiving space being situated in operative registration with the liquid dispensing means of the liquid handler, and in combination therewith, first and second inserts alternatively insertable into said insert-receiving space in said base, each of said first and second inserts having a generally rectangular configuration with two pairs of opposite insert corners, each of said insert corners being rounded and having a radius that substantially corresponds the radius of the corresponding insert-receiving space corner, wherein the radius of at least one of said insert corners in one of said pairs of opposite insert corners is different from the radius of the opposite corner in said pair of opposite insert corners, such that the insert can be received in said insert-receiving space in said base in only a single orientation, each of said inserts comprising a plurality of individual reaction vessel-receiving recesses arranged in a different array, each of said reaction vessel-receiving recesses in each of said insert recess arrays being aligned with a different one of the liquid dispensing means of the liquid handler when the insert is received in said insert-receiving space in said base.

122. (newly presented) The apparatus of claim 121 wherein the radius of one insert corner in each pair of opposite insert corners is different from the radius of the opposite insert corner in that pair of opposite insert corners.

123. (newly presented) Apparatus for performing chemistry reactions in a plurality of open-mouthed, closed-bottomed, reaction vessels in conjunction with a liquid handler of the type having a plurality of individual liquid dispensing means arranged in a pattern, said apparatus comprising a base having an exterior wall and an interior wall, said interior wall defining an insert-receiving space in said base, at least a portion of said interior wall being inclined relative to said exterior wall, means for sealing the mouths of the reaction vessels, said sealing means being mounted above said base, between the reaction vessels and the liquid dispensing means of the liquid handler, and comprising a sealing plate having a plurality of sealable openings, each of said sealable openings being aligned with a different one of the reaction vessels, such that liquid can be dispensed through said sealing plate into the reaction vessels from the liquid dispensing means of the liquid handler, said insert-receiving space being situated in operative registration with the liquid dispensing means of the liquid handler, and in combination therewith, first and second inserts alternatively insertable into said insert-receiving space in said base, each of said first and second inserts comprising a sidewall at least a portion of which is inclined, wherein said portion of sidewall is inclined to a degree corresponding to that of said portion of said interior wall of said base, each of said inserts comprising a plurality of individual reaction vessel-receiving recesses arranged in a different array, each of said reaction vessel-receiving recesses in each of said insert recess arrays being aligned with a

different one of the liquid dispensing means of the liquid handler when the insert is received in said insert-receiving space in said base.

124. (newly presented) The apparatus of claim 123 wherein each of said first and second inserts comprises a bottom surface and wherein said portion of said sidewall is inclined about one degree from a line perpendicular to said bottom surface.